

PHENIX WEEKLY PLANNING

TECHNICAL
SUPPORT
2012



6/28/2012
Don Lynch

This Week

TECHNICAL
SUPPORT
2012

- Cu-Au Run ends
- Short Access to open VTX/FVTX for 5 GeV run
- 5 GeV Run starts, extended, ends
- Shutdown generic WP (Done)
- Start VTX/FVTX Post Run Tests
- Purge Flammable Gas
- Open Shield Wall
- Drop power to EC and dumb waiter
- sPHENIX design and analysis continues
- 2012 Shutdown begins
- MPC Work Permit
- VTX/FVTX Work Permit
- MuTr all stations work permits (3)
- RPC Work Permit

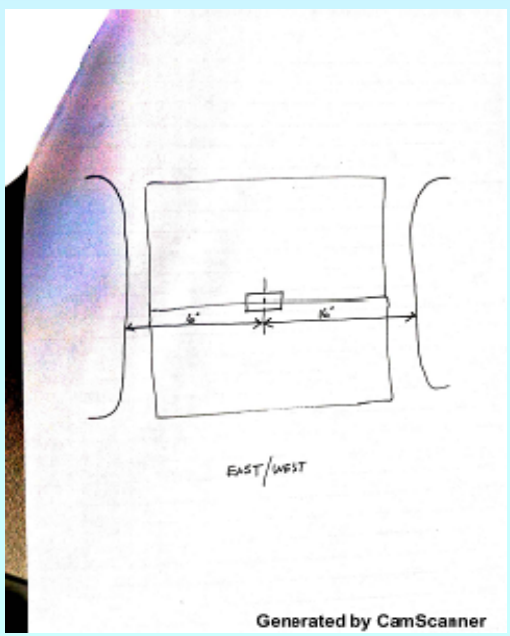
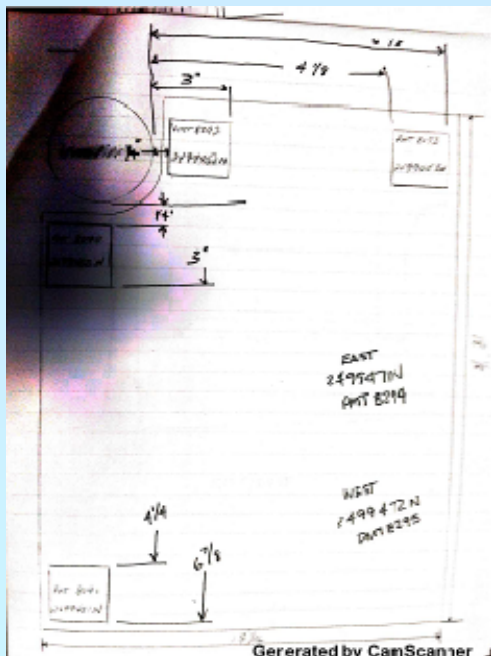
Next Week

- 4th of July holiday, limited support staff
- Riggers to un stack shield wall
- Carpenters/riggers remove EC ladder and dumb waiter
- VTX/FVTX continue testing until 7/9
- sPHENIX design and analysis continues
- 2012 Shutdown prep continues
- Other Business

2012 Shutdown Projects:

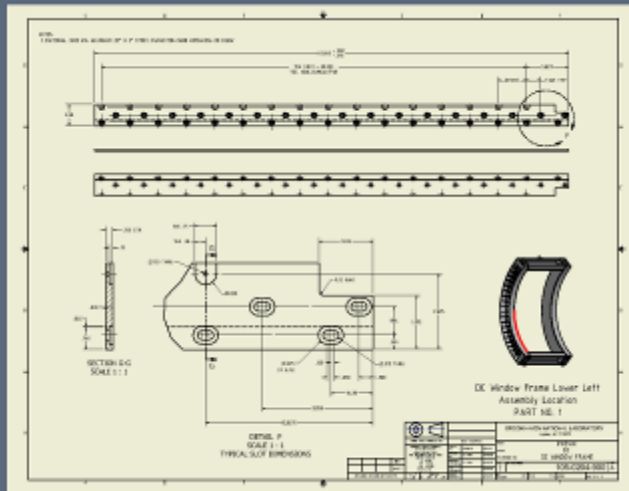
- VTX/FVTX Removal, Repair and Upgrade, Reinstallation
- VTX/FVTX cooling system maintenance and upgrades
- RPC1 Cooling Upgrade
- DC West Repairs/Upgrade
- MuTr Station 1 South Upgrade
- MuTr, MuTrigger Stations 2 & 3 Upgrades
- MPC repairs
- Other subsystem work
- Future Upgrades related work

VTX/FVTX open for 5 GeV run +
Rad monitoring added



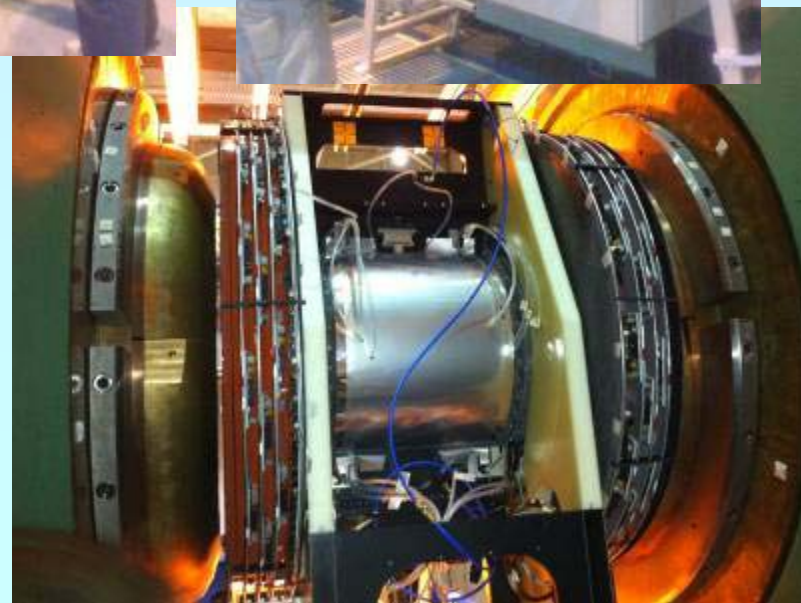
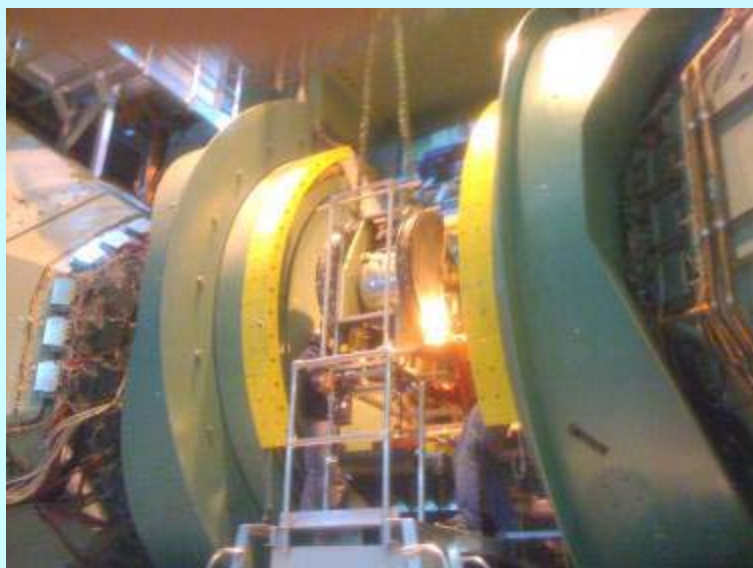
DC West Upgrade Design and measurements

TECHNICAL SUPPORT



VTX Installation 2010 & 2011. 2012 Removal and re-installation will be same.

TECHNICAL SUPPORT



FVTX request to accelerate removal of VTX/FVTX to CHEMISTRY

(Currently scheduled for July 30)

Work Permit in Progress

RPC Station 1 North and South Cooling Upgrade



North

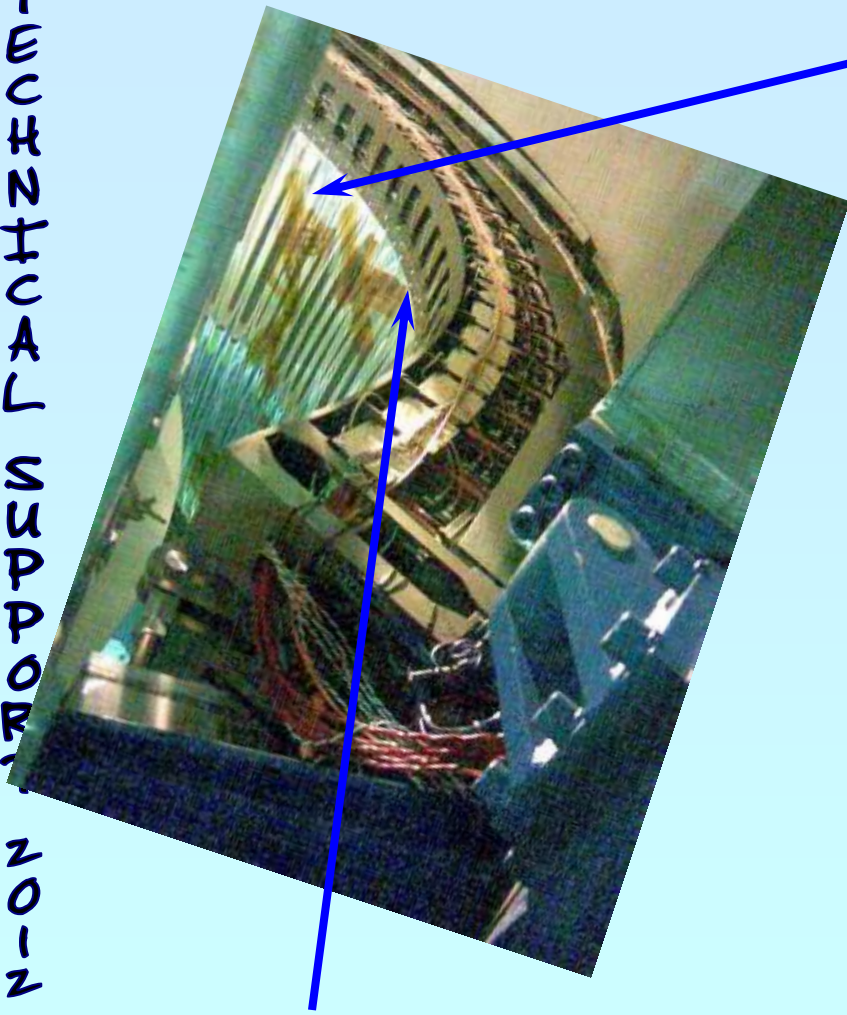


South

Work Permit in Progress

DC West Repairs/Upgrade

Years of wire repairs on the DC west have rendered the DC west window a patchwork of tape and have elevated leak rates to the point where replacement of the mylar window is needed. The design of the DC west window is slightly different from the DC east which has an improved window support structure and sealing concept. These improvements are to be incorporated into the DC West this summer.



Sealing/window mounting plates (both sides)

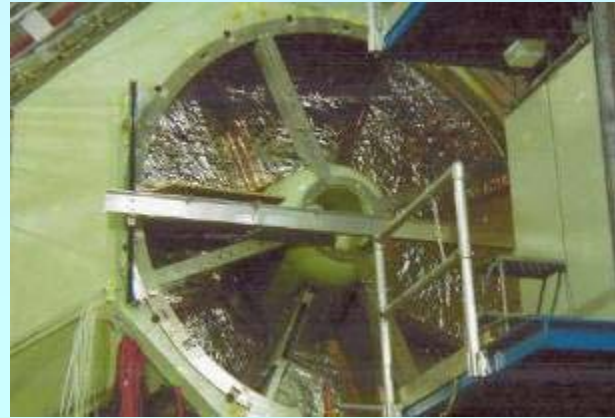
- Station-1 South re-capacitation and termination



vacuum lifting fixture



view when sta-1 removed (south)



Clamp-on Terminator Installation on North & South Station-3

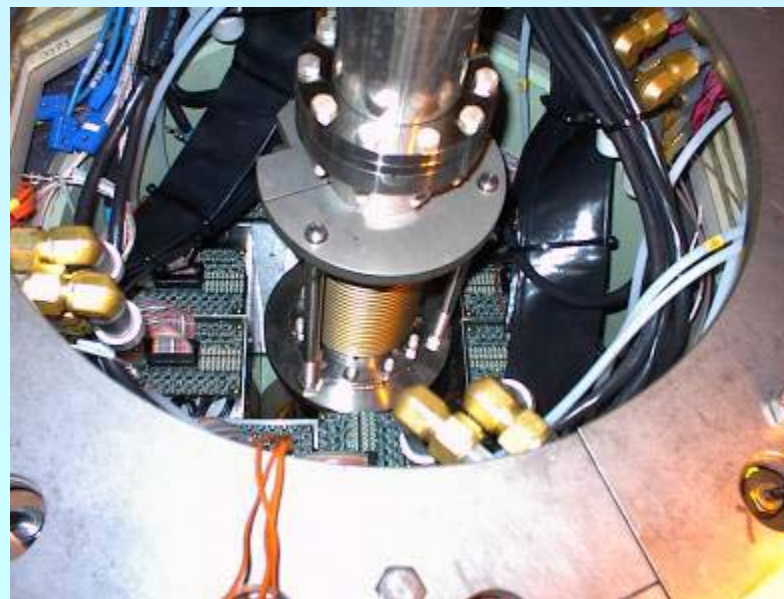
- Lower clamp-on terminators already installed for both north and south sta-3 (bottom 4 octants)
- With new work platforms that reaches all of sta-3; install remaining (upper) clamp-on terminators.
- Analyses submitted to CAD engineering.



MPC repairs

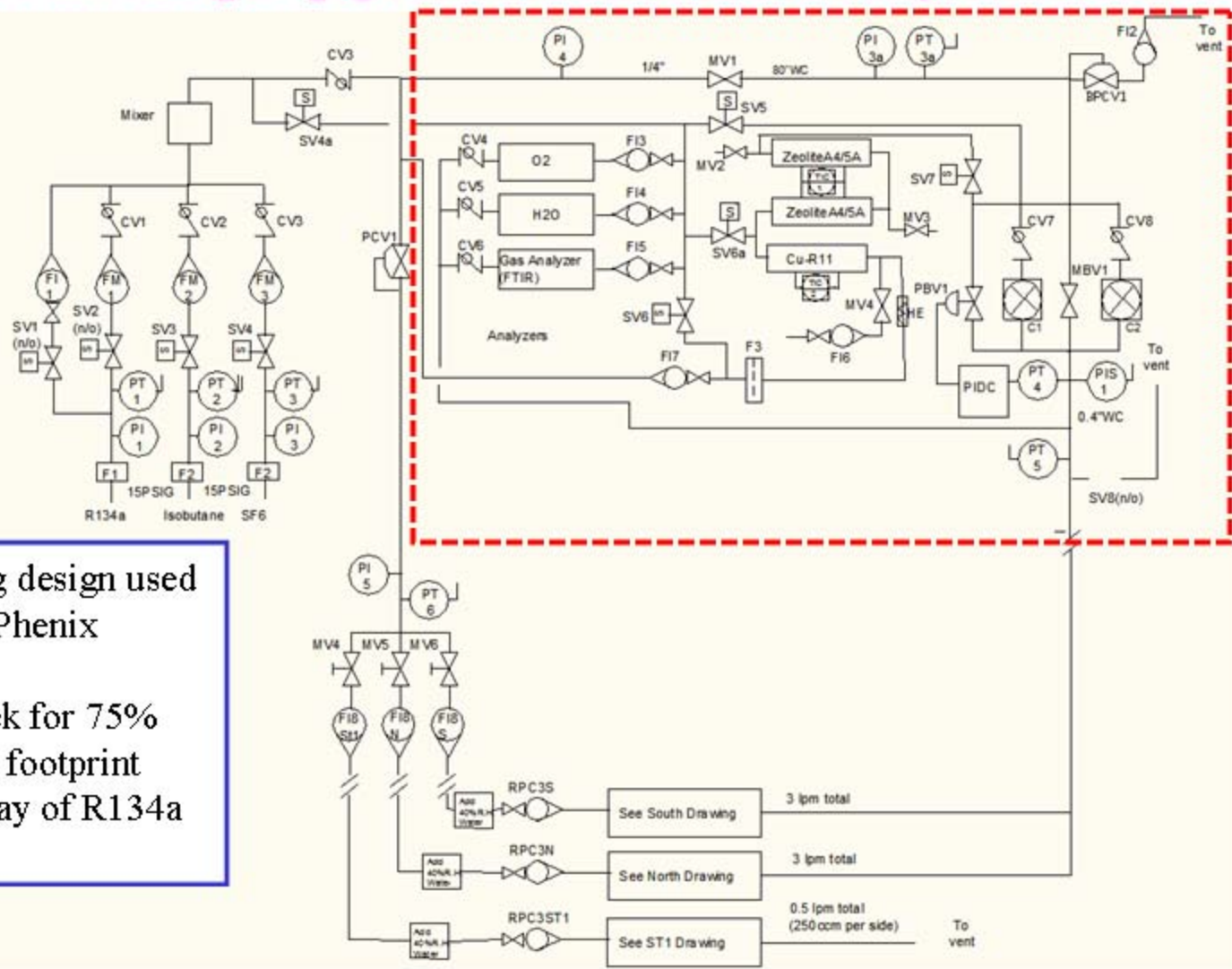
Need CAD manlift week of 7/9 - Asked for at CAD coord meeting

Need WP, in progress



Run 12 Shutdown Work Overview Gas/Cooling Systems

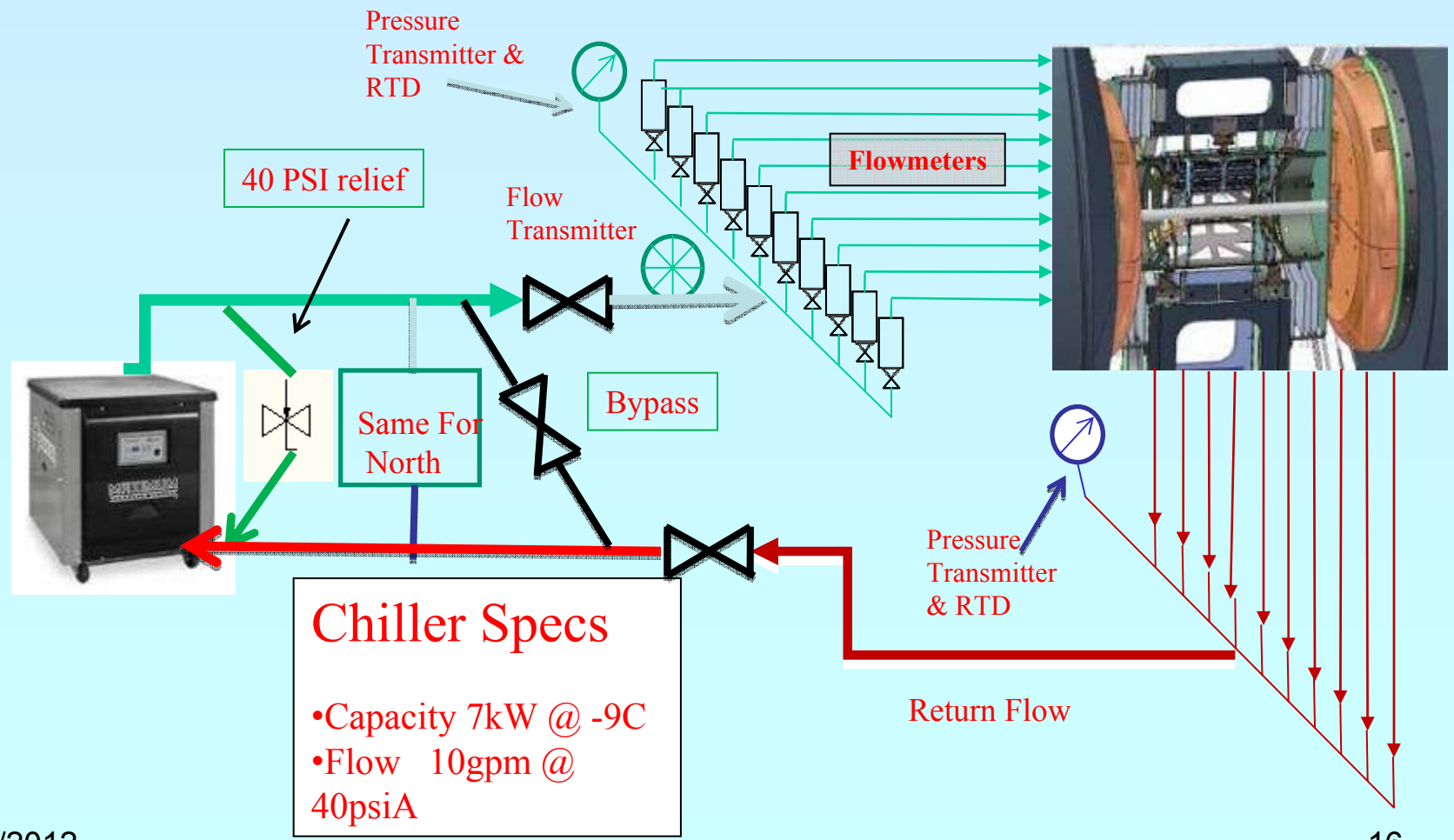
Recirculating Upgrade to RPC Gas System



- Based on working design used for many years at Phenix
- Save money
 - \$3k per week for 75%
- Reduces lab CO₂ footprint
 - 60 lbs per day of R134a

Nover 7200 Chiller

- Big Wheel/ Low temp chiller
 - Rebuild to increase size of manifold
 - make pixel lines permanent
- Low Temp
 - Split North FVTX feeds
 - Upgrade to 3/4" pipe from 1/2" where possible
 - Increase size of manifold to reduce restrictions
- Nitrogen
 - Add more lines for FVTX feeds



Chiller Specs

- Capacity 7kW @ -9C
- Flow 10gpm @ 40psiA

Upgrade Novec Cleaning System

- Install filters for both loops
- Run insulated stainless lines from chillers to filters

Chiller Work

- Replace nylon reinforced hose with stainless flex (2 per Chiller)
- Bring in vendor to do maintenance on units

Process Cooling Lines

- Clean up routing of lines over labyrinth to reduce restrictions
 - 8 elbows per loop
 - 30 feet per loop
 - Reduce length of flex likes (keep extensions on hand)
- Add instrumentation to monitor and alarm chiller conditions
 - Possibly use HBD gas DAQ

Chilled Water Lines

- Add instrumentation to monitor chilled water
 - (pressure/ Flow indicator)
- Add chiller 3 water lines
- Improve manifolding

New Electrical Work for 2012 Shutdown, to be accomplished as time is available

1. Support CAD replacement of Assembly Hall 480V Fused Switch Panels #8H-1, 8H-2, and 8 EMH1. Coordinate temporary power patch while work is being performed and minimize impact on shutdown work.
2. Add the Assembly Hall Crane lockout/contactors/ indicator light key switch circuit - similar to IR Crane.
3. Add Transient Surge Suppressor to 3 phase power panel on the Central Magnet Bridge.
4. The Gas Mixing House Breaker Panel for the Gas Mixing side is almost out of spare breaker slots and needs to be reviewed for increased capacity panel to replace it.
5. New computer rack replacements/additions for upcoming Run 13 & Rack Room computer infrastructure changes involving power distribution circuit (UPS and normal AC power) re-work

Additional Work for 2012, not yet scheduled, to be fit in as available

1. Replaced aging magnet hoses (CM only)
2. identify obsolete services passing through sill and remove them.
3. Cover for services coming from IR through sill.
4. Plan for stripping out TEC electronics and services to free up TEC racks.
5. Add limit switch and improved spooling control for window washer cable.

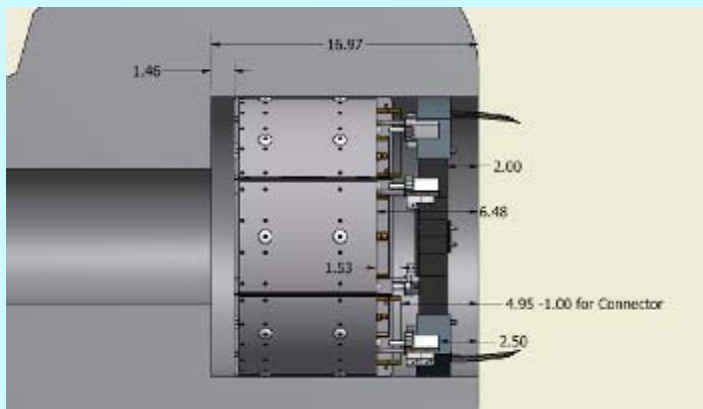
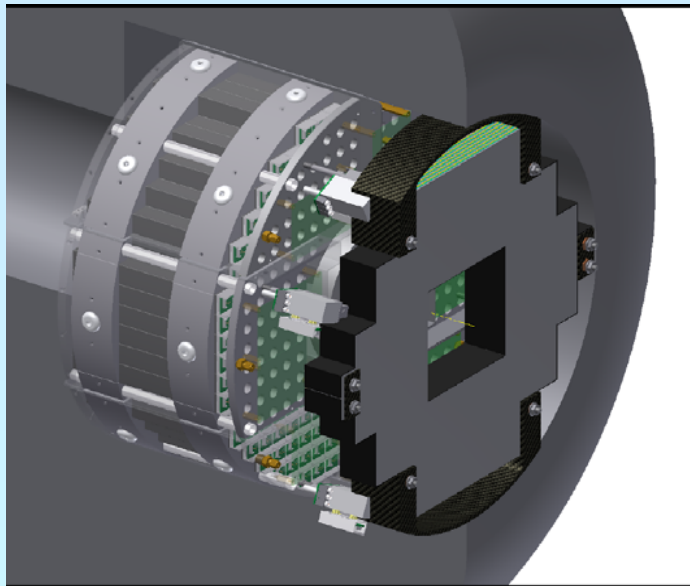
PHENIX Shutdown 2012 Electronics Upgrade /Repair

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2012

- Replace remaining RS-485 type ADAMs on West carriage with MODBUS/TCP type.
- Install Ethernet switches and MODBUS/TCP ADAMs on Central Magnet arm.
- Install second MODBUS server in counting house.
- Install MTP patch bay and jumpers for FVTX in counting house.
- Add several backup MTP fibers from CH to IR

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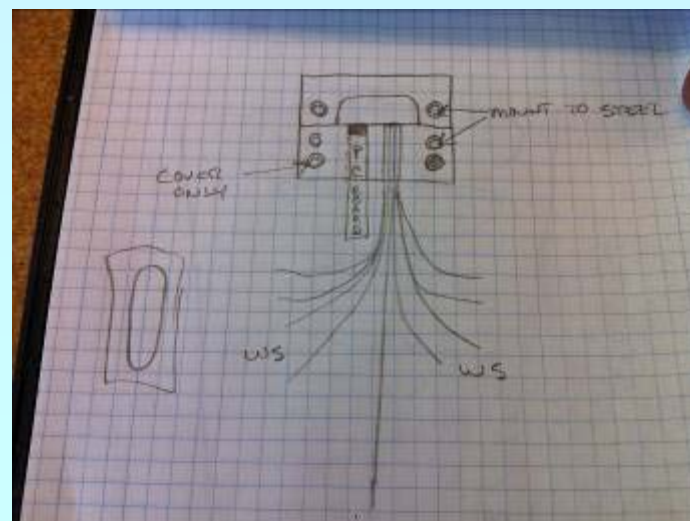
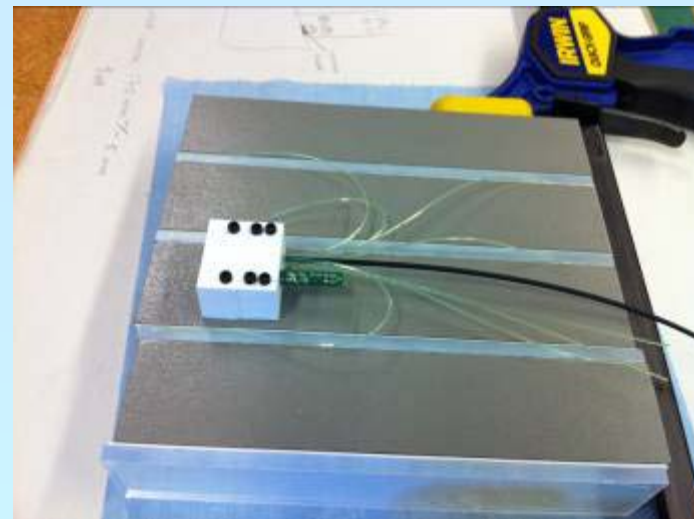
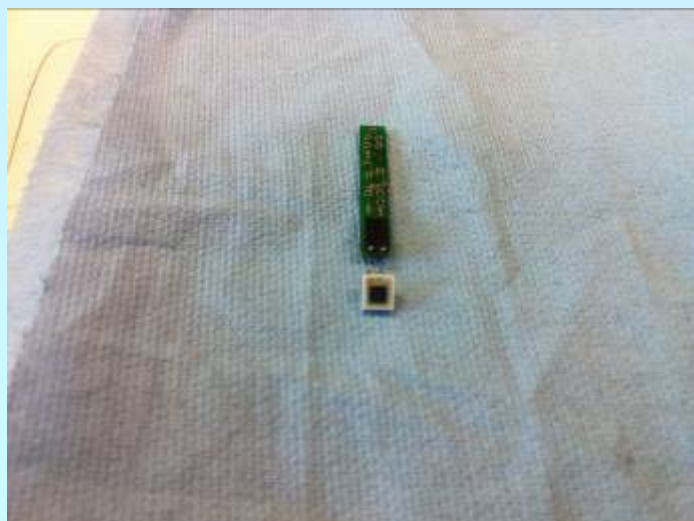


MPC-Ex Upgrade

We will be making measurements and test fitting mockups this summer in preparation for design and fabrication next fall, if proposed upgrade is approved

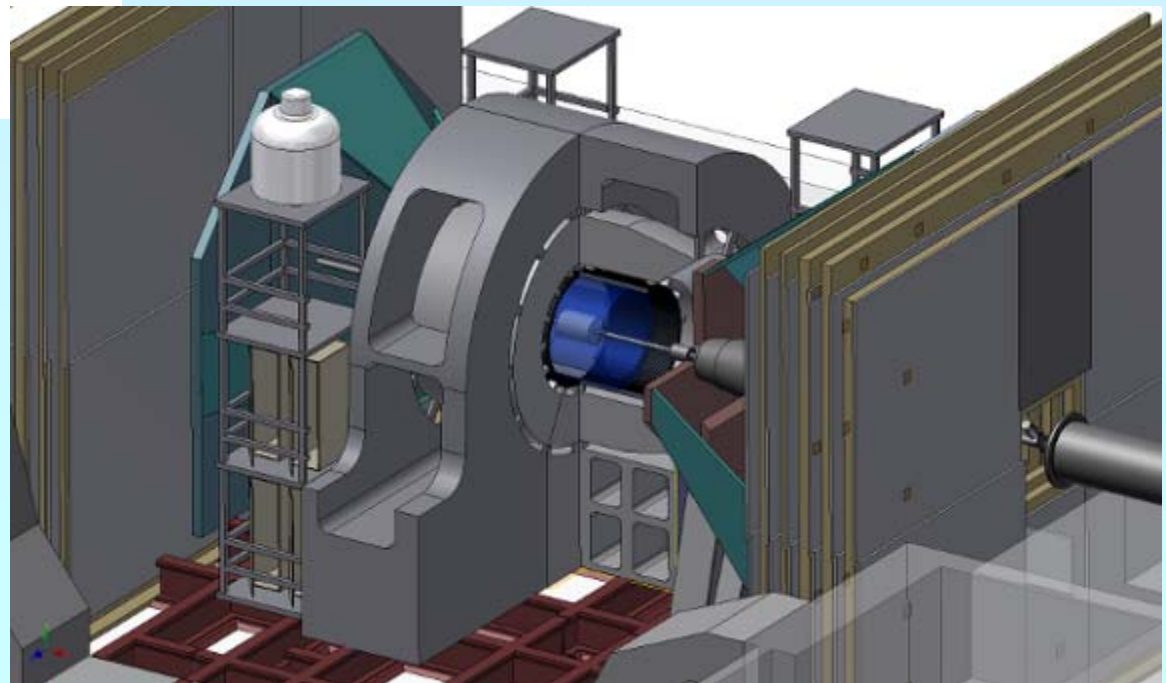
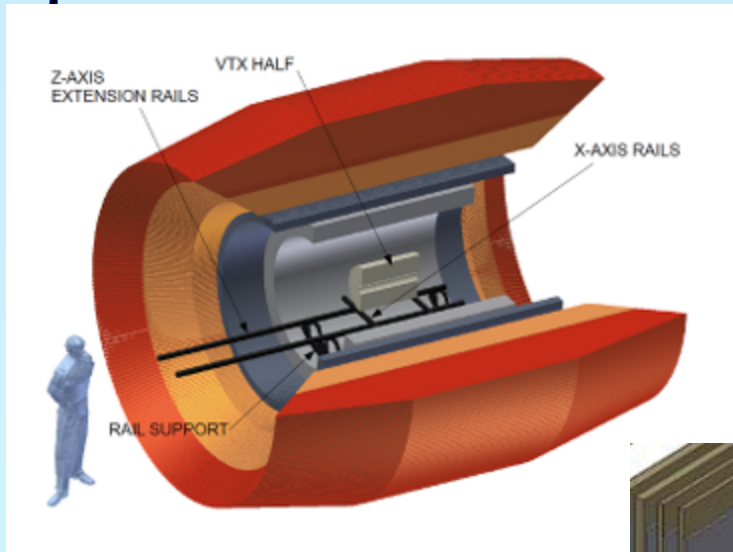


sPHENIX HCAL Prototype work



sPHENIX Proposed Upgrade

We will be making measurements and observations to develop information concerning decommissioning and removal of some existing PHENIX subsystems, and integration of sPHENIX into retained PHENIX subsystems.



Requested CAD Support for 2012 Shutdown

TECHNICAL SUPPORT ZONE

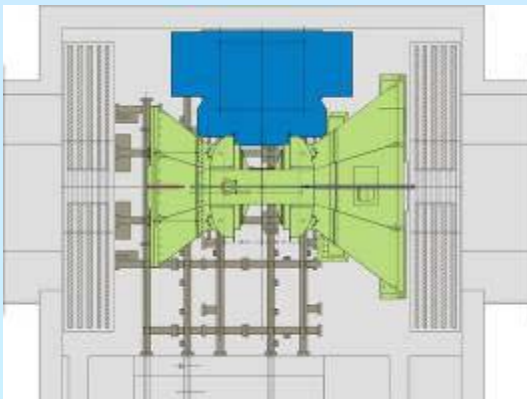
- Riggers - Disassemble and stow moveable shield wall and plug door - week of June 25
- Riggers and Carpenters - remove dumbwaiter and ladder from EC - week of July 2
- Carpenter - Assist with Station 1, MMS, MMN and DC West scaffolding and work platforms
- -7/23-Oct. 26 (2 weeks at beginning, 1 week at end, $\frac{1}{2}$ days at various intervals between)
- Articulated manlift - For removal and re-installation of MPC N - weeks of 7/9 and 10/16
- CAD Mech techs - remove and restore MMS and MMN lampshades - week of 7/23
- Survey - VTX/FVTX at Chemistry and PHENIX IR - 10/8-11/9
- Riggers - transport VTX/FVTX to IR from Chemistry - week of 10/29
- Carpenters and Riggers - erect and disassemble Summer Sunday dance floor - 8/1-8/7
- Riggers and Carpenters - restore dumbwaiter and ladder to EC - week of 11/26
- Riggers - Assemble shield wall and Install plug door - 12/26-12/28
- Blue Sheets and White Sheets - 12/3-12/21
- A/C evaluation and repairs, IR and rack room A/C's - complete by start of run 13

Procedures for Shutdown 2012

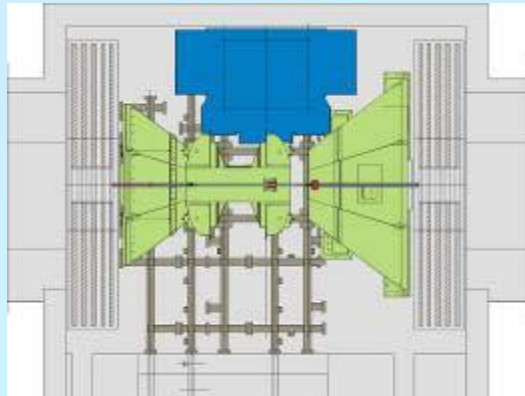
- Existing PHENIX General Purpose Recurring Task procedures - **on line**
 - VTX Removal
 - FVTX/VTX installation
 - VTX Survey
 - FVTX Survey
 - FVTX Cooling System Upgrades
 - MuTr Maintenance & Upgrade (stations 1 2 & 3)
 - MuTrigger Maintenance and Upgrade
 - DC Repair - Incl. in WP
 - MPC removal and re-installation - incl in WP
- Procedures will be part of 1 WP for VTX and FVTX
- Incl. in separate WP's for MMN and MMS entry

Work Permits for Shutdown 2012

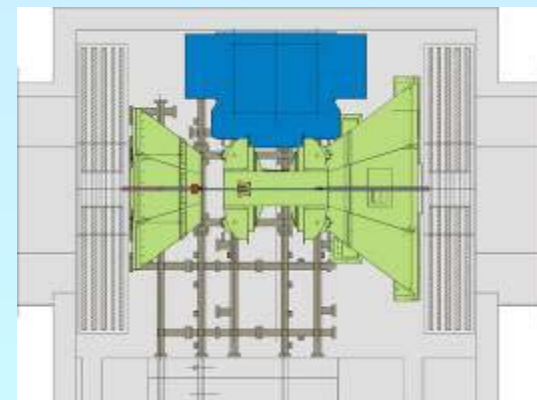
- Start of Shutdown (PHENIX) - **Done**
- VTX Removal/FVTX/VTX Installation - **In Progress**
- MuTr/MuTrigger Maintenance and Upgrade 3 WP's: Station 1, MMN and MMS work
- RPC1 Cooling Upgrade (PHENIX) - **In Progress**
- DC West Repairs - **in Design**
- MPC repairs - **in Progress**
- End of Shutdown (PHENIX)



IR is currently in this (Run) configuration. (MuID collars not shown)



After MuID collars are removed and EC is moved to AH, MMS is moved south. CM is then moved south to gain access to Station 1 North. MPC North to be removed, RPC1 North to be addressed. (1 week)



CM is then moved north to gain access to station 1 south. Work on RPC1 South, DC West, MPC South and MuTr Station 1 South. After all work finished move CM south, reinstall MPC complete RPC1 North work, survey step 1 for beampipe, then move CM north complete beampipe and CM survey. Move MMS North to run position. VTX/FVTX work may be done in any configuration.

TECHNICAL SUPPORT 2012

Prep for shutdown	Done
Define tasks and goals	
Analysis and design of fixtures, tools and procedures	
Fabricate/procure tools and fixtures	
Tests, mockups, prototypes	
Receive, fabricate, modify, finish installables	
Review and approval of parts, tools, fixtures and procedures	
Assembly and QA tests	
AH Crane Upgrade (variable speed & wireless remote)	
End of Run Party	Done
Run 12 Ends	Done
Shutdown Standard Tasks	In Progress
• Open wall, disassemble wall, Remove MuID Collars,	
• Move EC to AH, etc.	
VTX Strip-pixel post run tests	In Progress
FVTX post run tests	7/1-7/8/2012
Disassemble VTX/FVTX services	7/9-7/27/2012
July 4 th Holiday	7/4/2012
Open Station 1 North, remove MPC North for repairs	7/9-13/2012
RPC1 North Cooling Upgrade	7/9-13/2012
Remove VTX/FVTX and transport to Chemistry Lab	7/30/2012
Remove MMS & MMN vertical East lampshades	7/23-7/27/2012
Summer Sunday (8/5) Prep and teardown	8/1-8/7/2012
Summer Sunday (RHIC)	8/5/2012

TECHNICAL SUPPORT ZONE

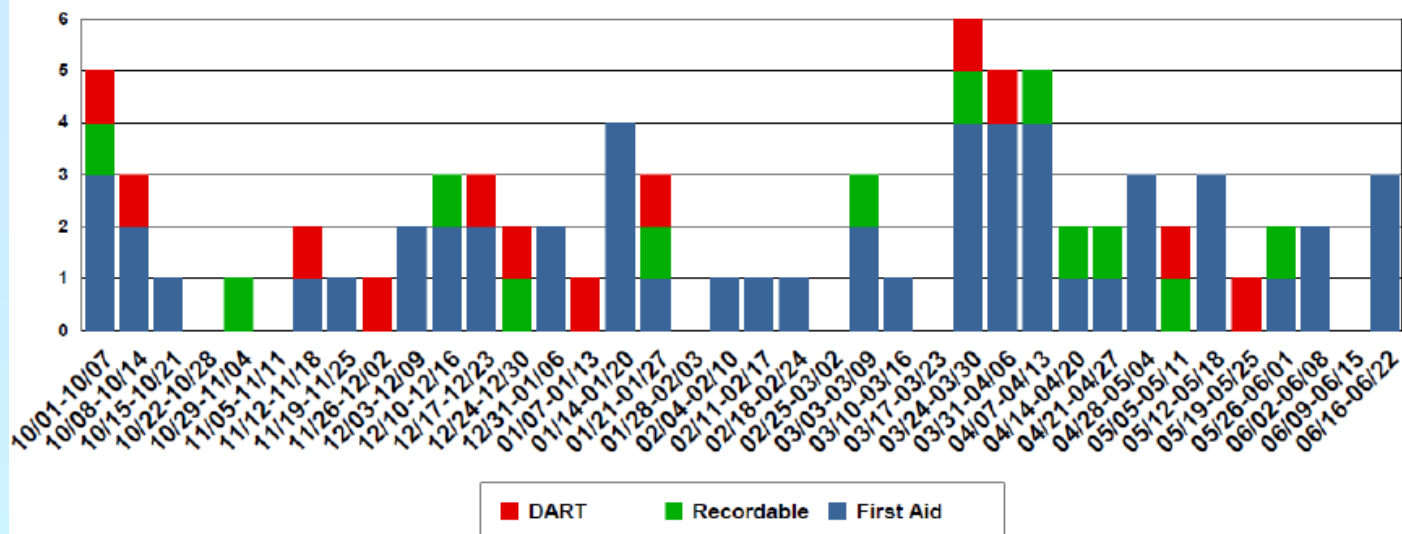
MuTr South Station 1 work	
Install access (Sta. 1 work platforms)	7/30-8/3/2012
Disconnect Cables, hoses etc, ID/label all	8/6-8/10/2012
Remove FEE plates and chambers	8/13-8/17/2012
Station 2 Terminators and manifold upgrade through access opened by station 1 removal	8/20/-8/31/2012
MPC South repairs	8/20-9/15/2012
RPC 1 South cooling upgrade	8/20-9/15/2012
Labor Day Holiday	9/3/2012
MuTr South Station 1 work (Cont'd)	
Clean/install new MuTr Sta. 1 chamber parts and upgrades (concurrent At RPC Factory)	8/20/-9/7/2012
Re-install chambers and FEE plates	9/10-9/14/2012
Re-cable, re-hose and test	9/10-9/28/2012
re-capacitation and air manifold upgrades	
Station 3 North and South (upper half)	7/23-9/30/2012
Repair upgrade, reassemble VTX/FVTX	7/23-10/5/2012
Test, survey (at Chemistry and IR) and re-install VTX/FVTX	10/8-11/9/2012
Substation breaker upgrade/test (CAD)	8/20-9/30
AH utility power distribution upgrade	8/20-9/30
DC West maintenance (replace window)	9/15-10/15
RPC stations 1 and 3, north and south maintenance	As required
Other detector maintenance as required	As required
Infrastructure maintenance as required	As required
TBD prototype tasks	As required
Open Station 1 North, re-install MPC North	10/16-10/26/2012
RPC1 North Cooling upgrade (if not completed earlier)	10/16-10/26/2012

TECHNICAL SUPPORT ZONE

Veterans Day Holiday	11/12/2012
Pre-run commissioning and prep for run 13	11/1-12/31/2012
Prep for EC roll in	11/12-11/16/2012
Roll in EC	11/19-11/23/2012
Thanksgiving Holidays	11/22-23/2012
Prep IR for run	11/26-12/3/2010
Pink/Blue/White sheets	12/3-12/21/201
Christmas Holidays	12/24-25/2012
Start run 13	1/1/2013

.

Injuries Per Week (FY) As of 6/22/2012



Injury Status:

FY12 YTD: DART – 12, TRC – 24, First Aid – 53

FY11: DART – 27, TRC – 42, First Aid – 45

FY10: DART – 19, TRC – 33, First Aid – 52

FY12 Injury Listing: <https://intranet.bnl.gov/esh/shsd/seg/OccInj/BNLInjuries.aspx>

Recent Injuries		
6/21/12	First Aid	An employee reported an injury from repetitive overhead work. At the clinic he was given first aid and referred for an x-ray and a physical therapy evaluation.
6/21/12	First Aid	A contractor employee caught a finger between equipment pieces. First aid was provided at the OMC and he was referred to his own medical provider.
6/18/12	First Aid	An employee was injured while fabricating equipment in the basement of Building 463. At the clinic, he received first aid treatment and returned to normal duties.
6/8/12	First Aid	An employee was driving when he was struck by a crate. At the OMC, he received first aid.
6/7/12	First Aid	An employee developed forearm pain while climbing a ladder. At the OMC, he received first aid.
5/31/12	First Aid	A contractor was cutting pipe and a piece of pipe fell onto his left foot. At the OMC, he received first aid.
5/22/12	DART	An employee reported an arm injury from material handling of tools. After losing a day from work, he reported the injury to the OMC. Classification pending investigation.
5/18/12	First Aid	An employee reported arm pain related to repetitive motion. At the OMC, she received first aid.

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Recent Events		
6/22/12	SC-3	An AC unit failed in building 490, room 7-20A. A burnt capacitor generated smoke which activated the building smoke alarm system. A complete building evacuation followed. Fire/Rescue responded. (Event Link)
6/21/12	SC-BNL	A vehicle, left running, moved, unoccupied, from apt. #1a to bldg. #317. It made contact with a building hand-rail. There is damage to the hand-rail and approximately 1 gallon of transmission fluid was spilled to pavement & soil. The fluid has been cleaned up. The vehicle has been towed to the motor pool. There are no injuries to report. (Event Link)
6/21/12	Non-Reportable	A ruptured hydraulic line from a fork lift spilled less than or equal to 10 gal. of hydraulic fluid to pavement, with ~ 1 quart reaching soil. (Event Link)
6/21/12	Non-Reportable	Spurious fire alarms were reported in building 555 at 1:42 & 8:26 AM. Fire/Rescue responded to the alarms and found no trouble. The system was reset, each time. (Event Link)
6/20/12	Non-Reportable	A container used for collecting glass broke and spilled its contents to the ground. (Event Link)

Where To Find PHENIX Engineering Info



http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm

